

customers are provisioned using lines that have been leased from ACS.¹³ As shown in **Exhibit V** (which summarizes the method of provisioning used by GCI in serving switched voice residential customers by ACS wire center), the degree to which GCI relies on ACS for leased lines, as well as the extent to which GCI has its cable plant in place to be upgraded, varies based on specific geography. **Exhibit VI** provides a similar summary for GCI's switched voice business customers. In the residential market, GCI relies on ACS to provide service (over leased lines) to [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of the switched lines that it provides to its residential customers in two of the seven largest wire centers, as well as in the remaining wire centers taken together.¹⁴ In the business market, this is the case in four of the seven largest wire centers, as well as in the remaining wire centers taken together. GCI plans on continuing with its plan to upgrade its cable plant to provide DLPS, but the extent of cable plant upgrade will also vary by geography. In the residential market, cable plant is not in place for upgrade for [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of the switched voice lines in the Rabbit Creek wire center, while in the business market GCI cable plant does not pass [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of switched voice lines in five of the seven largest wire centers, as well as the remaining wire centers taken together (and in only one wire center does GCI cable plant pass [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of switched business lines).

19. **Exhibit VII** summarizes the total scope of switched and non-switched services that GCI provides to its business customers. GCI provides [BEGIN CONFIDENTIAL][END CONFIDENTIAL] switched local voice lines and [BEGIN CONFIDENTIAL][END CONFIDENTIAL] non-switched circuits (*i.e.*, DS-1s) to these customers in Anchorage. [BEGIN CONFIDENTIAL][END CONFIDENTIAL], or [BEGIN CONFIDENTIAL][END CONFIDENTIAL], of GCI's switched local voice lines that are provided to its business customers are leased from ACS. Furthermore, [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of the non-switched services that GCI provides to its business customers are

¹³ Based on November 2005 data provided by GCI.

¹⁴ Based on the data provided me by GCI, I use 7 specific wire centers: Central, East, North, South, West, O'Malley, Rabbit Creek. All other wire centers (Elemendorf, Ft. Richardson, Girdwood, Hope, and Indian) are aggregated into the category labeled "Other."

leased from ACS. On a combined DS-0 equivalent basis,¹⁵ [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of GCI's circuits that are provided to business customers are provisioned over ACS facilities.

IV. Methodology

20. I use net present value (NPV) analysis to determine whether or not GCI is able to provide an economically feasible alternative to ACS's local exchange network in Anchorage.¹⁶ Specifically, I use an NPV framework to assess the economic feasibility of GCI fully serving its customers over its own network (*i.e.*, without leasing network components from ACS, whether through UNEs or resale). This NPV analysis estimates the benefit (in dollars) that GCI could realize by serving telephony customers directly over its own facilities, compared to not serving these telephony customers at all. A positive NPV indicates that it is economically accretive for GCI to invest in upgrading its network to serve its customers, while a negative NPV indicates that GCI would suffer losses if it made such investments.¹⁷

21. GCI uses two different types of networks to directly serve its customers. GCI uses its cable network to provide DLPS to its residential and some of its business switched voice customers. In order to convert the customers that it currently serves over lines leased from ACS onto its own cable network, GCI needs to invest in upgrading its cable facilities so that it can provide DLPS. As described by Gary Haynes, cable networks and cable standards were developed primarily for voice and high speed internet service for mass market customers, and

¹⁵ Lines of different capacities are frequently normalized by converting them to a common denominator. Typically, this is in voice grade equivalents (VGEs) which are measured as DS-0 (digital service level zero). A DS-1 line has a transmission speed of 1.544 Mb/s and is equal to 24 DS-0s. A DS-3 line has a transmission speed of 44.736 Mb/s and is equal to 28 DS-1s (or 672 DS-0 circuits).

¹⁶ I use 15 years of cash flows in this analysis which reflect GCI's current per line economics. However, the analysis does not reflect a specific time frame for converting lines leased from ACS over to GCI facilities.

¹⁷ Calculating NPV generally involves deducting an initial investment (cash outflow, " C_0 ") or series of investments from the present value of revenues (cash inflow over time, " C_1 ", " C_2 ", " C_3 ".... " C_N "). The present value of cash inflows is calculated by discounting these inflows by the opportunity cost of capital (" r "). The general formula for calculating net present value is:

$$NPV = C_0 + \frac{C_1}{1+r_1} + \frac{C_2}{(1+r_2)^2} + \frac{C_3}{(1+r_3)^3} + \dots + \frac{C_N}{(1+r_N)^N}$$

As I discuss later in this declaration, I use net cash inflows in this NPV analysis, which reflects the revenues received less the various costs incurred in each time period. For additional discussion of NPV analysis, see Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (Boston: Irwin-McGraw Hill, 2000).

were not designed to support the types of high capacity services commonly provided over DS-1 or fractional DS-1 circuits. There is no industry standard that would allow GCI to use its DOCSIS-based¹⁸ cable plant to provide the high capacity services that are demanded by its medium and large business (i.e., enterprise) customers. Instead, when GCI self-provisions high capacity services, it uses its fiber optic network. In order to serve over its own facilities the medium and large business customers taking non-switched and high capacity switched DS-1 service that it currently serves over lines leased from ACS, GCI would need to invest in extending its fiber plant in order to connect these customers.

22. I use two separate NPV models in order to appropriately reflect GCI's network solutions to providing switched and non-switched services. I use a cable plant NPV model for analysis of the residential segment and businesses whose switched voice lines can be served using DLPS. I assume that all switched services, including those to medium and large business locations, can be provided over GCI's cable plant - provided that this plant passes customer locations. I believe that this is a conservative assumption, because it is possible that the switched demands of GCI's enterprise customers may be too large or complex to be provided over GCI's cable plant. I also believe that this is a conservative assumption because enterprise customers typically require that carriers provide an integrated switched and non-switched service. My analysis allows for GCI to serve switched demand over its cable plant, which is a less expensive alternative to extending its fiber plant - which is what would be required to provide an integrated switched and non-switched solution.¹⁹

23. I used a fiber plant NPV model to analyze the economic feasibility of GCI self-provisioning non-switched service to its medium and large business customer locations. GCI currently serves [BEGIN CONFIDENTIAL][END CONFIDENTIAL] locations with non-switched service, which when also including their switched circuits contain [BEGIN CONFIDENTIAL][END CONFIDENTIAL] DS-0 equivalents. I used the fiber plant NPV

¹⁸ DOCSIS refers to the Data Over Cable Service Interface Specification that was developed by CableLabs and approved by the ITU. It defines the interface requirements for cable modems involved in high-speed data distribution over cable television system networks.

¹⁹ In practice, barriers to self-provisioning a customer's non-switched services could create a substantial impediment to serving that customer's switched voice services. Review of GCI customer location data indicates that it will be unable to provide both switched and non-switched service for certain of its medium and large business customers because GCI cannot economically serve non-switched demand with its fiber plant (although cable plant is nearby to serve switched demand).

model to determine the economic feasibility of GCI extending its own fiber network to serve the [BEGIN CONFIDENTIAL][END CONFIDENTIAL] non-switched locations which it currently provisions over facilities leased from ACS.²⁰ The distinction between "customer" and "location" is an important one in analyzing the economics of extending GCI's fiber optic network to serve business customers. Business customers are frequently concentrated at locations which may create enough demand in aggregate to justify constructing facilities to serve them in total (e.g., a multi-tenant office building), while the individual demands of any single customer may not be enough to justify the capital expenditures required to extend GCI's fiber based network. I analyze the economic feasibility of extending GCI's fiber plant based on an NPV estimated for each business customer location.²¹ If the model predicts that GCI can provide service to this business location with a positive NPV (or it "passes" GCI's business case analysis), I assume that GCI will migrate all of the non-switched circuits at that location to fiber-based facilities. If the location "fails" the fiber plant business case (i.e., the model predicts that GCI can only serve this business location at a negative NPV), I assume that GCI could not economically serve that location over its own fiber facilities.

24. I also used the fiber plant NPV model to estimate the economic feasibility of GCI providing combined switched and/or non-switched solutions to its medium and large business customer locations. GCI provides services to [BEGIN CONFIDENTIAL][END CONFIDENTIAL] locations which each demand eight or more switched lines and/or at least one DS-1 line. (The [BEGIN CONFIDENTIAL][END CONFIDENTIAL] non-switched locations that I referenced above are a subset of this group.) GCI provides these locations with [BEGIN CONFIDENTIAL][END CONFIDENTIAL] equivalent DS-0 circuits. This analysis reflects the economic feasibility of GCI using its fiber network to provide services to its larger customers, which may have complex demands beyond the capacity of its current cable plant technology. I use the more conservative bifurcated approach (i.e., cable plant NPV model and

²⁰ As I discuss later in Section IV, in addition to the non-switched demand in these locations, I include the switched circuits as relevant demand for calculating the NPV of these locations.

²¹ Business locations may contain both small business as well as medium and large (i.e., enterprise) business customers. For purposes of this analysis, the term "medium and large business locations" does not necessarily imply that the customers at these locations are by themselves considered to be medium or large business customers. There may be some instances in which a medium and large business location contains only a number of small business customers. Therefore, I refer to the relevant demand unit in the following discussion as "location" or "customer location."

fiber plant NPV model separately) to develop my conclusions concerning the extent to which GCI can economically convert lines that are currently leased from ACS onto its own facilities (as shown in *Exhibits I and II*).

25. I applied only incremental revenues and costs in both of the cable and fiber plant NPV analyses. GCI's incremental revenues are those associated with providing local exchange service in the case of switched voice lines and revenues associated with high capacity (*i.e.*, DS-1) service in the case of non-switched services. In the cable plant NPV model, I use revenues that GCI receives from provision of local exchange service (including the revenues that GCI receives from revenue from universal service funding). In the fiber plant NPV model, incremental revenues includes revenues associated with non-switched services as well as switched service revenues, including applicable universal service support (provided the specific location receives switched services in addition to non-switched services).

26. Incremental costs include those operating and capital costs associated with expanding GCI's current cable and fiber plants to connect the customer locations that are now served by GCI through lines leased from ACS. Incremental capital expenditures are a particularly important element of this NPV analysis, because it involves the single most significant cost that GCI will need to incur in upgrading and/or extending its networks. I include only those capital expenditures associated with upgrading GCI's existing cable plant to provide DLPS to customer locations currently provided service over leased lines and the cost of extending GCI's existing fiber plant to provide non-switched service to customer locations currently served through leased DS-1s. I do not include embedded network costs in my analysis.

27. GCI's fiber plant does not have the same coverage that its cable plant has. The "upgrade" to GCI's fiber plant actually involves extending the fiber optic based network so that it passes the medium and large business locations that GCI currently serves over facilities leased from ACS (primarily UNE DS-1). The incremental capital expenditures associated with connecting medium and large business locations to GCI's fiber network reflect these costs of extending GCI's current fiber network.

28. The above analyses assume that GCI is able to upgrade and/or extend its networks in a technically and operationally feasible time frame, but without defining that time frame. I use

GCI's average costs (based on its current implementation schedule) for cable and fiber plant upgrades.²² I also conduct a sensitivity analysis which estimates the impact of GCI incurring higher levels of capital expenditure in its conversion onto its own facilities – which could be caused by accelerated plant upgrade and/or extension schedules and/or higher costs for resources.²³

V. GCI's Residential and Small Business Segment Economics

29. The level of capital expenditure associated with upgrading GCI's cable plant for DLPS is a primary factor in estimating an NPV. GCI has been upgrading its cable plant to provide DLPS to its residential (as well as to some of its business) customers over the past several years. In general, upgrading GCI's cable plant involves installing new equipment specifically associated with providing local voice service and modifying the common cable plant to accommodate this additional demand. Upgrading the cable plant includes: modifications and expansions at GCI's central switch (which involves the addition of voice gateways, cable modem termination systems, narrowcast lasers, wave division multiplexers, and optical splitters); construction of new (or splitting of existing) optical nodes which are located throughout GCI's cable network,²⁴ and construction and installation work associated with connecting customers (primarily involving modifying or replacing the drop and installing a multimedia terminal adapter, or MTA, at the customer's premises). The specific technical and engineering issues associated with such an undertaking are discussed by Gary Haynes in his declaration. In my economic feasibility analysis for GCI's switched voice market, I used GCI's projections of the average incremental per line capital expenditure to upgrade its cable plant to provide DLPS assuming its current

²² GCI does not have a schedule for extending its fiber plant. The costs used in the fiber plant NPV model are based on averages of GCI's various technical analyses, and assume that GCI will not experience an undue acceleration of fiber plant extension.

²³ Cable plant NPV analysis is conducted on an average basis (separately for residential and small business segments). I do not project how GCI would prioritize its cable plant upgrade (and therefore the percentage of customers that would be upgraded) if it were not able to fund the entirety of its upgrade program.

²⁴ Currently, there are [BEGIN CONFIDENTIAL][END CONFIDENTIAL] nodes in GCI's cable plant. Upgrading the cable plant to provide DLPS will require many of these nodes to be modified, as well as construction of new nodes.

network powered method of provisioning.²⁵ These GCI projected costs of upgrading its plant are lower than the historical upgrade costs per line that GCI experienced in 2004 and 2005.²⁶

30. I modeled the cash flows associated with self-provisioning service to mass market customers, such that recurring cash flow equals: monthly local voice revenue less network and customer care costs²⁷ less taxes²⁸ less replacement-related capital expenditures.²⁹ I did not include the initial customer acquisition costs as a cost in this model, because GCI is already serving these customers (and is only converting the method of provisioning).³⁰ I also accounted for the extension of customer life through marketing and promotion efforts and the addition of new customers by adding a terminal value to the NPV calculation.³¹ The recurring cash flows included in the discounted cash flow (DCF) analysis were discounted by a weighted average cost of capital (WACC) of 8.5%, based on the discount rates that have been used by several equity researchers in valuing GCI stock prices.³²

31. I applied this DCF model separately to each of GCI's mass market segments for which I had segregated data (*i.e.*, residential and small business) to reflect differences in assumptions for residential versus small business customers. Many of the assumptions included in the DCF are the same for both the residential and small business segments, notably assumptions relating to

²⁵ It is undoubtedly the case that the actual per line cost varies by customer. While the cost of connecting a specific customer will almost certainly include the cost of installing a MTA, it may or may not include the cost of modifying or installing a drop and/or a portion of the costs associated with installing a new or splitting an existing node.

²⁶ Cable plant upgrade costs may actually increase on a per line basis as GCI upgrades its cable plant in areas that are less dense than the areas upgraded in 2005.

²⁷ Only operating costs that are incremental to GCI's existing video and cable modem operations are included. Allocations of shared network costs and of general and administrative costs are not included.

²⁸ I take depreciation into account when estimating taxes. I do not include interest expense in this calculation.

²⁹ This capital expenditure is a modest contingency amount which covers the costs associated with replacing equipment which fails prematurely.

³⁰ Customer acquisition costs are typically quite high for CLECs that do not already have customers in place. Inclusion of this cost would likely lower the NPV greatly.

³¹ The terminal value is calculated by estimating an NPV of acquiring a new customer following the churn of the previous (churned) customer. I assume that GCI would acquire future customers (after churn) in the same proportion as its current market share in Anchorage. Customer acquisition costs are included in the NPV calculation of additional customers after churn.

³² Jeffries & Company, Inc. in its December 13, 2005 research report ("General Comm. Providing True Triple-play in Alaska") uses a DCF model to value GCI share prices and applies a discount rate of 8.5%. Oppenheimer Equity Research in its November 3, 2005 research report also used an 8.5% discount rate in its DCF analysis.

the incremental capital expenditure per line for cable plant upgrades. However, based on GCI historical data, these two segments have had different experiences with respect to average *recurring monthly revenues and levels of customer churn*.

Residential Segment

32. My analysis indicates that GCI's decision to upgrade its cable plant to provide telephony service to its residential customers, on average, yields a positive NPV. GCI has estimated that [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its [BEGIN CONFIDENTIAL][END CONFIDENTIAL] switched residential lines are passed by its cable plant. GCI also has found that [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its residential customers have not authorized GCI to make the final arrangements for converting them from UNE-L to DLPS.³³ Taking both these factors into account, it is likely that GCI will not be able to convert [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its residential lines that are now served using leased ACS lines onto DLPS. Thus, even after GCI has been able to fully upgrade its cable plant, it is likely that GCI will not be able to provide an economically feasible alternative to ACS's network for [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its residential lines.

33. The economic feasibility of GCI constructing an alternative network to ACS's network, however, is sensitive to the average per line level of capital expenditure involved in the cable plant upgrade. Increases in the level of incremental capital expenditures per line - stemming from accelerating the pace of cable telephony upgrades to the extent that is even operationally feasible (as Gary Haynes discusses in his declaration) - can change the positive NPV to a negative value. I estimate that [BEGIN CONFIDENTIAL][END CONFIDENTIAL] in such costs would serve to make GCI's cable plant upgrade program uneconomic. This sensitivity does not specifically quantify, however, the costs associated with overcoming the operational impediments described by Mr. Haynes (such as weather, seasonal constraints on permitting,

³³ GCI understands that this reluctance by customers is due to scheduling issues and customer inconvenience. This explains why some of GCI's residential customers that are located in areas where cable plant has been upgraded are still served over facilities leased from ACS, even though GCI has invested in the facilities required to provide DLPS. In these cases, GCI has both made the investments required to self-provision and continues to pay monthly lease fees to ACS.

network design and equipment procurement timeframes, and difficulties obtaining additional workers), or whether or not such impediments can be overcome at all.

Small Business Segment

34. GCI can generally provide DLPS to its small business customers by upgrading its cable plant – similarly to its provision of DLPS to residential customers – provided that its cable plant passes these small business customers. I used the same cable plant model that I used to determine whether or not GCI could provide an economically feasible alternative to ACS's network to residential customers (above) in my analysis of the small business market. I used the same assumptions concerning the capital expenditures required to upgrade GCI's cable plant for DLPS³⁴ and the incremental operating costs that GCI would incur following the upgrade. I used higher levels of monthly recurring revenues for switched voice lines and lower levels of customer churn in the small business analysis, however, reflecting GCI's experience with this customer segment.

35. I find that GCI can economically upgrade its cable plant network to deploy DLPS to its small business customers, provided that cable facilities run past the specific business location being considered. Margins in the small business segment are stronger than is the case in the residential segment, primarily because of the higher levels of monthly revenues and lower levels of churn.

36. GCI estimates that its cable plant passes [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its [BEGIN CONFIDENTIAL][END CONFIDENTIAL] switched local voice lines that it provides to its small business customer locations. In those areas in which GCI has already upgraded the plant to provide cable-based telephony, [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its business customers whose services can be provisioned over cable telephony have not authorized GCI to make the final arrangements for converting them from leased ACS lines to DLPS. For business customers, this reluctance may reflect customers' concerns about reliability and the risk of loss of service during conversion, as

³⁴ This is likely a conservative assumption. Unlike residential premises, business premises require additional work to provide service even if cable plant runs past it, such as adding an underground drop.

well as inconvenience and scheduling concerns.³⁵ Taking these factors into account, it is likely that GCI will not be able to convert [BEGIN CONFIDENTIAL][END CONFIDENTIAL] or [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of switched voice lines used by its small business customers.

37. The above analysis concerning GCI's small business market may be slightly optimistic, however. The economics of GCI serving its small business customers over its own facilities would likely be less favorable if GCI found it uneconomic to serve its residential customers over its own cable facilities. This is because the calculation of NPV for GCI's small business segment included here assumes the average per line level of capital expenditure that GCI projects it will incur if it continues to upgrade its cable plant in its entirety (*i.e.*, serving residential and business customers.) If GCI were to upgrade its cable plant for its small business customers only (either because cost increases from an accelerated deployment rendered the residential upgrade uneconomic or because the particular service area contained few residential customers), it is likely that average cost per line would increase because there would be fewer lines across which to spread common costs.

VI. GCI's Medium and Large Business Segment Economics

38. GCI defines its medium and large business segment³⁶ as locations with eight or more GCI switched local voice lines and/or one or more DS-1s at a single business location.³⁷ As I discussed earlier, I applied the cable plant NPV model to analyze the economic feasibility of GCI providing this segment switched services over its own facilities. I used similar assumptions concerning revenues, cost and churn that I used in analyzing the small business segment. I find that GCI can economically provide switched services to many of its medium and large business locations over its cable plant, provided that cable facilities runs past business customer locations

³⁵ Service diversity requirements are considerations for larger sized customers. This is likely less of an issue for small business customers.

³⁶ For purposes of this analysis, large business is grouped with medium business. It may be appropriate to treat larger businesses (*i.e.*, enterprises demanding DS-3 services and above) as a separate market. However, there appear to be only a small number of DS-3s in all of Anchorage (served by either ACS or GCI).

³⁷ This segmentation reflects GCI's own internal analysis, and reflects the specific customer demographics of the Anchorage markets. Generally, customers and/or locations with eight switched lines would not be classified as "medium business." More typically, customers and/or locations of this size would be considered "small business." This segmentation reflects the low level of telecommunications demand in Anchorage compared to many other metropolitan areas in the United States.

and the switched demands at a location do not exhaust cable plant capabilities. Taking into account locations which are not passed by GCI's cable plant and GCI's experience with customer reluctance to permit the completion of the conversion process,³⁸ I estimate that GCI will not be able to economically self-provision [BEGIN CONFIDENTIAL][END CONFIDENTIAL] (or [BEGIN CONFIDENTIAL][END CONFIDENTIAL]) of its switched lines in medium and large business locations.

39. Determining whether or not GCI can provide an economically feasible alternative to ACS's network in the Anchorage local exchange markets for non-switched services requires examining the incremental capital and operating costs that it would incur in extending its current fiber optic plant in order to directly connect the customer locations that it currently provisions over leased DS-1s from ACS. The initial capital expenditure needed to connect each location to GCI's fiber network is a function of distance (over which GCI needs to bring its fiber optic cable) and equipment. GCI provided me with a sample of their technical analyses concerning the distances and other issues associated with connecting "off-net" locations (*i.e.*, locations not passed by GCI's current fiber plant) onto its fiber network. I used the average distance derived from my review of GCI's technical analyses.³⁹ I estimated the capital expenditure for electronic equipment based on GCI's historic cost associated with such equipment, adjusted to reflect the specific demand levels at each location and the average length of lateral fiber.

40. GCI provided me with the locations of all of its business customers which demand non-switched services. I aggregated the customer data by locations, which provided the levels of revenue and demand for each location. I performed a DCF analysis for each location. I calculated the recurring monthly cash flow in the same manner as I did in the DCF model that I used for analysis of the switched voice market. I assumed that the recurring monthly cash flow remained constant over the duration of the customers' contracts.⁴⁰ I also assumed that a percentage of customers will remain with GCI after the end of their contracts, based on GCI's historical experience with contract renewals.

³⁸ In addition to the aforementioned concerns about reliability, risk of loss of service during conversion, and inconvenience and scheduling, many customers in this segment require diversity in their mix of telecommunications services.

³⁹ At this time, data is not available to provide specific fiber distances for specific locations.

⁴⁰ I use GCI's average historical contract lengths for this assumption.

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41. **Exhibit VIII** summarizes the results of my economic feasibility analysis of GCI's non-switched customer locations. It also highlights the economic challenge associated with *extending facilities to serve locations with relatively low levels of demand for telecommunications services*. The majority of the business customer locations served by GCI in Anchorage demand less than 2 DS-1 equivalent circuits, which represents a relatively low level of telecommunications demand compared to various other metropolitan markets in the United States.⁴¹ The prevalence of customer locations with relatively low levels of demand has a major effect upon GCI's ability to provide an economically feasible alternative network to these locations. My analysis indicates that GCI cannot economically self-provision [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its non-switched customer locations (currently provisioned over lines leased from ACS) which have demand of less than 2 DS-1 equivalent circuits.

42. As I discussed earlier in **Exhibit II**, I estimate that GCI will be able to economically self-provision [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its non-switched locations. **Exhibit VIII** provides additional insight into the [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of non-switched locations which reside off of GCI's fiber network.⁴² It indicates that GCI can only economically self-provision [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net non-switched customer locations. If GCI could not lease lines from ACS to provision service to the remaining [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net non-switched customer locations, it would be unable to serve [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net non-switched demand.

43. I examined the sensitivity of the NPV analysis for non-switched customer locations to changes in the cost of capital.⁴³ Changing the WACC from 8.5% to 15% greatly reduces the

⁴¹ I base this statement on review of demand in Anchorage compared to several major telecommunications markets. I have not conducted a study which benchmarks the Anchorage market against a panel of markets.

⁴² As shown in **Exhibit VIII**, [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of GCI's [BEGIN CONFIDENTIAL][END CONFIDENTIAL] non-switched locations are off of its fiber network.

⁴³ As I introduced earlier, I performed the DCF-based economic feasibility analysis using a WACC of 8.5%. Extending a fiber optic network may involve additional risk above this level, however. GCI uses a WACC of 15% in its internal economic feasibility analysis when determining whether or not to extend its network to a new location. This discount rate is in line with the practices of other carriers (that I have reviewed) when evaluating the feasibility of extending fiber plant to serve an off-net building.

economic feasibility of GCI serving its non-switched customer locations over its own network, lowering the passing off-net locations from [BEGIN CONFIDENTIAL][END CONFIDENTIAL] down to [BEGIN CONFIDENTIAL][END CONFIDENTIAL].

44. The economic feasibility analysis for switched voice service for GCI's medium and large business customer locations summarized in **Exhibit I** assumes that GCI can serve these locations with its cable plant, provided that it passes these locations and is appropriately upgraded. This is likely a conservative assumption given the complex demands of many medium and large business customers combined with the lack of any DOCSIS-based standard for providing DS-1 service over a cable telephony network, as is more fully discussed in the Declaration of Gary Haynes. **Exhibit IX** summarizes my analysis of the economic feasibility of GCI self-provisioning both switched and non-switched services to its medium and large business customer locations by extending its fiber optic network. GCI provides either switched and/or non-switched services to [BEGIN CONFIDENTIAL][END CONFIDENTIAL] medium and large business customer locations in Anchorage.⁴⁴ The majority of these locations ([BEGIN CONFIDENTIAL][END CONFIDENTIAL] out of [BEGIN CONFIDENTIAL][END CONFIDENTIAL]) are currently served off of GCI's network. If GCI had to rely on a fiber optic solution to serve its medium and large business customer locations, it would only be able to economically serve [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of these off-net locations, which account for [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net medium and large business telecommunications demand. The remaining [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of locations, accounting for [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net medium and large business demand, would have to be served over ACS facilities. Increasing the WACC to reflect a higher level of risk associated with such an undertaking (to 15%, as I did in **Exhibit VIII**) serves to reduce the economic feasibility of GCI serving these locations. Under that case, GCI could only economically self-provision [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net locations, which would leave unserved [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of the locations and [BEGIN CONFIDENTIAL][END CONFIDENTIAL]

⁴⁴ That is, for customers who demand at least eight switched access lines and/or at least one DS-1.

CONFIDENTIAL] of demand (assuming that GCI could not economically lease facilities from ACS).

VII. Summary

45. In summary, my analysis projects that GCI will be able to provide an economically feasible alternative to **[BEGIN CONFIDENTIAL][END CONFIDENTIAL]**, of its mass market switched voice services. This finding appears to be in agreement with GCI's current cable plant upgrade program. Even with the assurance of GCI's plans to convert residential and small business customers to DLPS, however, it is likely that GCI will not be able to self-provision **[BEGIN CONFIDENTIAL][END CONFIDENTIAL]** of its current residential customers and **[BEGIN CONFIDENTIAL][END CONFIDENTIAL]** of its small business customers' switched voice lines. This analysis does attempt to quantify the time required to self-provision.

46. The degree to which GCI will be able to economically self-provision switched voice services varies significantly by geography and customer class, primarily because of the uneven nature of GCI's cable plant coverage. GCI's cable plant does not pass **[BEGIN CONFIDENTIAL][END CONFIDENTIAL]** of business locations in at least five of the seven largest ACS wire centers, as well as in the remaining wire centers taken together, making it unlikely that GCI will be able to economically serve these switched voice customers over its own facilities.

47. The economic feasibility of GCI provisioning switched voice services over its own cable plant is contingent upon its current projections for the capital expenditures required for upgrading its plant. My analysis indicates that GCI will not, on average, be able to economically convert the lines that it currently leases from ACS onto DLPS if capital expenditures for cable plant upgrade increase by **[BEGIN CONFIDENTIAL][END CONFIDENTIAL]**. This finding is particularly important for the Commission to consider as it evaluates ACS's arguments for a rapid elimination of loop unbundling. Requiring GCI to accelerate its cable upgrade schedule could lead it to incur higher capital costs, which could change the economics of its cable upgrade program.

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48. The area of greatest potential economic preclusion, however, involves the market for non-switched services, which may also affect *medium and large business switched voice* services. I estimate that GCI will be unable to economically self-provision non-switched services to [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its non-switched customer locations (responsible for [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of non-switched demand). A majority of GCI's non-switched customer locations are off of its fiber optic network, and have relatively low levels of demand (below 2 DS-1s). I estimate that GCI will be unable to economically self-provision non-switched services to [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its current off-net medium and large business customer locations (responsible for [BEGIN CONFIDENTIAL][END CONFIDENTIAL] of its off-net demand in non-switched locations).

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Respectfully submitted,

William Zarakas

William P. Zarakas

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Exhibit I Summary of Economic Feasibility Analysis of Serving GCI Switched Voice Lines over GCI Cable Plant Anchorage LEC Study Area As of November 2005

Customer Segment	ACS Retail Lines	GCI Retail Lines	Total Anchorage Lines	GCI Leased Lines	Percent GCI Leased Lines	Total ACS Retail and Wholesale Lines [5]	% Lines Served by ACS - Retail and Wholesale [6]
Current Switched Voice Lines							
Residential Segment							
Small Business Segment	N/A		N/A			N/A	N/A
Medium and Large Business Segment	N/A		N/A			N/A	N/A
Total Business Segment							
Total	91,476	88,614	180,090	61,333	69%	152,808	85%
Estimated Number of Lines without Nearby Cable Plant [1]							
Residential Segment							
Small Business Segment							
Medium and Large Business Segment							
Estimated Number of Lines Failing Business Case [2]							
Residential Segment							
Small Business Segment							
Medium and Large Business Segment							
Estimated Number of Lines Customer will not Permit Conversion [4]							
Residential Segment							
Small Business Segment							
Medium and Large Business Segment							
Potential Switched Voice Line Mix Following Conversion Based on Economic Feasibility Analysis							
Residential Segment							
Small Business Segment	N/A		N/A			N/A	N/A
Medium and Large Business Segment	N/A		N/A			N/A	N/A
Total Business Segment							
Total							

Sources: GCI; 2005 ACS CASBB Report; Brattle Analysis.

Notes:

- [1] GCI estimates that [REDACTED] of GCI residential lines and [REDACTED] of GCI business lines are not near cable facilities. [REDACTED] of the business lines not near cable facilities are in medium and large business locations.
- [2] We assume that all addressable lines can be economically served over GCI's facilities when the average NPV per switched line is positive. This analysis assumes that GCI's switched voice customers can be served using DLPS. This assumption, however, does not reflect a judgment that it is technically feasible to serve all switched voice customers, particularly those in the medium and large business segment, with a DLPS solution.
- [3] Some locations have both DS-1s and switched lines and fail the fiber business case. We assume that customers would not split their service between two providers (i.e., GCI for switched over DLPS and ACS for non-switched DS-1s). This results in a small number of switched lines ([REDACTED]) that GCI would not be able to serve. A similar number ([REDACTED]) of switched voice lines are in locations not near cable plant but that pass the fiber business case. These two groups of lines [REDACTED].
- [4] GCI estimates (based on actual experience) that [REDACTED] of its residential and [REDACTED] of its business lines could not be converted because some customers will not allow GCI access to complete the conversion process.
- [5] Sum of ACS retail lines and GCI leased lines.
- [6] Sum of ACS retail lines and GCI leased lines divided by total Anchorage lines.

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Exhibit II Summary of Economic Feasibility Analysis of Serving GCI Non-switched DS-1 Circuits over GCI Fiber Plant Anchorage LEC Study Area As of November 2005

Segment	ACS Retail [1]	GCI Retail [5]	Total Anchorage	GCI Leased	Percent GCI Leased DS-1s	Total ACS Retail and Wholesale [6]	Percentage Served by ACS - Retail and Wholesale [7]
Current Non-switched DS-1 Circuits							
Non-switched DS-1 Circuits	████	████	████	████	████	████	████
Locations with Non-switched DS-1 Circuits [2]	N/A	████	N/A	████	████	N/A	N/A
Number of Leased Non-switched DS-1s in GCI On-net Locations [3]							
Number of Non-switched DS-1s Failing Fiber Feasibility Analysis [4]				████			
Number of Locations Failing Fiber Feasibility Analysis				████			
Potential Non-switched DS-1 Circuit Mix Following Conversion Based on Economic Feasibility Analysis (assuming GCI converts its leased DS-1s in on-net buildings) [8]							
Non-switched DS-1 Circuits	████	████	████	████	████	████	████
Locations with Non-switched DS-1 Circuits	N/A	████	N/A	████	████	N/A	N/A
Potential Non-switched DS-1 Circuit Mix Following Conversion Based on Economic Feasibility Analysis (assuming GCI does not convert its leased DS-1s in on-net buildings) [8]							
Non-switched DS-1 Circuits	████	████	████	████	████	████	████
Locations with Non-switched DS-1 Circuits	N/A	████	N/A	████	████	N/A	N/A

Sources: GCI; Brattle Analysis.

Notes:

- [1] Based on ACS-Anchorage special access lines from "Form M" annual report filed with the Alaska commission. Form M special access lines were provided as DS-0 equivalents. Dividing this value by 24 yielded an estimate of ACS' DS-1 equivalents in Anchorage.
- [2] GCI serves █████ locations with non-switched service. This number of locations is a subset of the total number of locations at which GCI provides either switched and/or non-switched services to its medium and large business customer (████ medium and large business customer locations, as is shown in Exhibit IX)
- [3] The lines included in this category are non-switched circuits at GCI on-net locations that remain provisioned over ACS leased circuits because of customer requests concerning diversity or where the customer has not given GCI access to complete the conversion.
- [4] As discussed in my declaration, "failing" or "passing" the economic feasibility analysis was based on a net present value (NPV) analysis. The results summarized here are based on a weighted average cost of capital (WACC) of 8.5%. Using a higher WACC (e.g., 15%) results in far fewer locations passing the feasibility analysis.
- [5] GCI data includes █████ non-switched DS-1 circuits used by GCI for internal purposes.
- [6] Sum of ACS retail lines and GCI leased circuits.
- [7] Sum of ACS retail lines and GCI leased lines divided by total Anchorage circuits.
- [8] This Exhibit provides two estimates of GCI non-switched circuits following economically feasible conversion using GCI fiber plant. GCI leases 292 DS-1 circuits in 279 locations that are on its fiber network because of customer requests for network diversity and/or data security, as well as scheduling or convenience considerations. Assuming all of these circuits are converted onto GCI's network (in addition to the off-net locations that pass the fiber feasibility analysis), GCI will be unable to serve a total of 18% of non-switched demand. Alternatively, assuming GCI is unable to convert the 292 leased circuits in the same 279 locations (in addition to the off-net locations that pass the fiber feasibility analysis), GCI will be unable to serve a total of 35% of non-switched demand.

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Exhibit III
Retail Switched Voice Lines
By Segment
Anchorage LEC Study Area [1]
As of November 2005

Segment	GCI Switched Voice Lines	GCI Switched Voice Line Share	ACS Switched Voice Lines	ACS Switched Voice Line Share	Total Switched Voice Lines [2]
Residential Business	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	88,614	49.2%	91,476	50.8%	180,090

Source: 2005 ACS CASBB Report; GCI.

Notes:

[1] For purposes of this analysis, we use the ACS LEC Study Area definition of Anchorage, which includes the following geographic areas:

Anchorage	Elmendorf	Fort Richardson
Girdwood	Hope	Indian
Portage	Rainbow	Sunrise

[2] Sum of GCI and ACS lines. Other CLECs have minimal switched voice line share in Anchorage.

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Exhibit IV GCI Residential and Business Switched Voice Lines By Provisioning Method Anchorage LEC Study Area As of November 2005

Provisioning Method	GCI Residential Switched Voice Lines		GCI Business Switched Voice Lines		Total GCI Switched Voice Lines	
	Number	As % of Total	Number	As % of Total	Number	As % of Total
GCI DLPS Facilities					19,725	22.3%
GCI Fiber Facilities					7,556	8.5%
GCI Fiber Facilities with Leased ACS Last Mile					11,094	12.5%
ACS UNE-L					44,845	50.6%
ACS UNE-P	0	0.0%	0	0.0%	0	0.0%
ACS Wholesale					5,394	6.1%
Total		100.0%		100.0%	88,614	100.0%
Lines Leased from ACS					61,333	69.2%
Lines Over GCI Network					27,281	30.8%

Source: GCI.

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Exhibit V GCI Residential Switched Voice Lines By Provisioning Method By Wire Center Anchorage LEC Study Area As of November 2005

Provisioning Method	Central	East	North	O'Malley	Rabbit Creek	South	West	Other Wire Centers [3]	Total
GCI DLPS Facilities									
GCI Fiber Facilities									
GCI Fiber Facilities with Leased ACS Last Mile									
ACS UNE-L									
ACS UNE-P	0	0	0	0	0	0	0	0	0
ACS Wholesale									
Total									
Lines Leased from ACS									
Lines Over GCI Network									
% GCI DLPS Facilities									
% GCI Fiber Facilities									
% GCI Fiber Facilities with Leased ACS Last Mile									
% ACS UNE-L									
% ACS UNE-P	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% ACS Wholesale									
% Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
% Lines Leased from ACS									
% Lines Over GCI Network									
Estimated Lines Not Near Cable Plant [1]									
% GCI Lines in Wirecenter Not Near Cable Plant [2]									
% GCI Lines in Wirecenter Near Cable Plant [2]									

Source: GCI.

Notes:

[1] Percentage from GCI study applied to GCI total lines.

[2] Based on GCI study of sample of residential addresses passed by cable plant.

[3] The other wire centers are Elemendorf, Ft. Richardson, Girdwood, Hope, and Indian. These have been combined here for presentation purposes only.

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Exhibit VI GCI Business Switched Voice Lines By Provisioning Method By Wire Center Anchorage LEC Study Area As of November 2005

Provisioning Method	Central	East	North	O'Mailey	Rabbit Creek	South	West	Other Wire Centers [3]	Total
GCI DLPS Facilities									
GCI Fiber Facilities									
GCI Fiber Facilities with Leased ACS Last Mile									
ACS UNE-L									
ACS UNE-P	0	0	0	0	0	0	0	0	0
ACS Wholesale									
Total									
Lines Leased from ACS									
Lines Over GCI Network									
% GCI DLPS Facilities									
% GCI Fiber Facilities									
% GCI Fiber Facilities with Leased ACS Last Mile									
% ACS UNE-L									
% ACS UNE-P	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% ACS Wholesale									
% Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
% Lines Leased from ACS									
% Lines Over GCI Network									
Estimated Lines Not Near Cable Plant [1]									
% GCI Lines in Wirecenter Not Near Cable Plant [2]									
% GCI Lines in Wirecenter Near Cable Plant [2]									

Source: GCI.

Notes:

[1] Percentage from GCI study applied to GCI total lines.

[2] Based on GCI study of sample of business addresses passed by cable plant.

[3] The other wire centers are Elemendorf, Ft. Richardson, Girdwood, Hope, and Indian. These have been combined here for presentation purposes only.

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Exhibit VII GCI Business Switched Voice Lines and Non-switched Circuits By Provisioning Method Anchorage LEC Study Area As of November 2005

Provisioning Method	GCI Business Circuits	DS-0 Equivalents [3]	As % of Total DS-0 Equivalents
Switched Voice Lines			
GCI DLPS Facilities	[REDACTED]	[REDACTED]	[REDACTED]
GCI Fiber Facilities	[REDACTED]	[REDACTED]	[REDACTED]
GCI Fiber Facilities with Leased ACS Last Mile	[REDACTED]	[REDACTED]	[REDACTED]
ACS UNE-L	[REDACTED]	[REDACTED]	[REDACTED]
ACS UNE-P	0	0	0.0%
ACS Wholesale	[REDACTED]	[REDACTED]	[REDACTED]
Total Switched Access Lines	[REDACTED]	[REDACTED]	100.0%
Lines Leased from ACS	[REDACTED]	[REDACTED]	[REDACTED]
Lines Over GCI Network	[REDACTED]	[REDACTED]	[REDACTED]
Non-Switched DS-1 Circuits [1]			
Over Leased ACS Facilities [2]	[REDACTED]	[REDACTED]	[REDACTED]
Over GCI Facilities	[REDACTED]	[REDACTED]	[REDACTED]
Total Non-Switched DS-1 Circuits	[REDACTED]	[REDACTED]	100.0%
Totals			
Total Leased from ACS	[REDACTED]	[REDACTED]	[REDACTED]
Total Over GCI Network	[REDACTED]	[REDACTED]	[REDACTED]
Total Switched Voice Lines and Non-Switched Circuits	[REDACTED]	[REDACTED]	100.0%

Source: GCI.

Notes:

- [1] Non-switched circuits are defined as DS-1 or fractional DS-1 circuits taken by GCI customers for local or long distance connectivity. This includes [REDACTED] non-switched DS-1 circuits used by GCI for internal and intercompany purposes.
- [2] Leased DS-1s are provisioned primarily by UNE DS-1s, but also wholesale and UNE HDSL DS-1s.
- [3] A minority of GCI DS-1 circuits are fractional or carry 3 MB. This analysis assumes all DS-1 circuits are 24 eDS-0s as a conservative and simplifying assumption, although the weighted average is slightly less than 24 eDS-0s.

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Exhibit VIII Economic Feasibility Analysis of Serving GCI Non-switched DS-1 Circuit Locations over GCI Fiber Plant Anchorage LEC Study Area As of November 2005

Number of GCI eDS-1s per Location	GCI Medium and Large Business Customer Locations		On-net GCI Medium and Large Business Customer Locations	Off-net GCI Medium and Large Business Customer Locations	% Off-net GCI Medium and Large Business Customer Locations with Positive NPV	
	Number	As % of Total			At 8.5% WACC	At 15% WACC
GCI Medium and Large Business Locations with Non-switched DS-1 Circuits						
Less than 2 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
2 to 3 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
3 to 4 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
4 to 8 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
8 or more eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
Total	██████████	100%	██████████	██████████	██████████	██████████
GCI DS-0 Equivalents in Medium and Large Business Locations with Non-switched DS-1 Circuits [1]						
Less than 2 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
2 to 3 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
3 to 4 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
4 to 8 eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
8 or more eDS-1s	██████████	██████████	██████████	██████████	██████████	██████████
Total	██████████	100%	██████████	██████████	██████████	██████████







































































Source: GCI.

Notes:

[1] Leased switched lines and non-switched circuits in on-net buildings are included in the on-net eDS-0s values.

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Exhibit IX Economic Feasibility Analysis of Serving GCI Medium and Large Business Locations over Fiber Plant Anchorage LEC Study Area As of November 2005

Number of GCI eDS-1s per Location	GCI Medium and Large Business Customer Locations		On-net GCI Medium and Large Business Customer Locations	Off-net GCI Medium and Large Business Customer Locations	% Off-net GCI Medium and Large Business Customer Locations with Positive NPV	
	Number	As % of Total			At 8.5% WACC	At 15% WACC
GCI Medium and Large Business Locations with Switched Voice Lines and / or Non-switched DS-1 Circuits						
Less than 2 eDS-1s						
2 to 3 eDS-1s						
3 to 4 eDS-1s						
4 to 8 eDS-1s						
8 or more eDS-1s						
Total		100%				
GCI DS-0 Equivalents in Medium and Large Business Locations with Switched Voice Lines and / or Non-switched DS-1 Circuits [1]						
Less than 2 eDS-1s						
2 to 3 eDS-1s						
3 to 4 eDS-1s						
4 to 8 eDS-1s						
8 or more eDS-1s						
Total		100%				

Source: GCI.

Notes:

[1] Leased switched lines and non-switched circuits in on-net buildings are included in the on-net eDS-0s values.